

TWO NEW SPECIES OF HETEROPTERYYS (MALPIGHIACEAE) FROM SOUTHEASTERN BRAZIL

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ABSTRACT. *Heteropterys fragilis* and *H. occhionii*, two new species of *Heteropterys* H. B. K. Subsection *Aptychia* Nied. (Malpighiaceae), are described and illustrated, and their affinities with related taxa discussed. Both species occur in the Brazilian Atlantic forest in the state of Rio de Janeiro.

RESUMO. *Heteropterys fragilis* e *H. occhionii*, duas novas espécies de *Heteropterys* H. B. K. Subsection *Aptychia* Nied. (Malpighiaceae), são descritas e ilustradas, e suas afinidades taxonômicas são discutidas. Ambas as espécies ocorrem em floresta Atlântica no Estado do Rio de Janeiro, Brasil.

The two new species here described are assigned to *Heteropterys* Subsection *Aptychia* Nied. (Malpighiaceae). They are known only from the state of Rio de Janeiro, Brazil. *Heteropterys fragilis* occurs in the Atlantic forest and *H. occhionii* presumably in similar habitat.

Heteropterys fragilis Amorim, sp. nov.—**TYPE:** BRAZIL. Rio de Janeiro: Estação Ecológica Estadual de Paraíso, Mpio. Guapimirim, 22°27–31'S, 42°50–56'W, trilha a esquerda da Estação de Tratamento de Água, 28 Oct 1999 fl/fr, A. M. Amorim, S. J. Neto & J. Caruso 3146 (holotype: CEPEC!; isotypes: MBM! MICH! RB! SP!). Fig. 1.

Liana sublignosa, ramis mox glabrescentibus; lamina foliorum majorum 5.3–12.5 cm longa, 0.9–3.1 cm lata, membranacea, elliptica, lanceolata, oblongo-lanceolata, vel falciformis, margine ciliata, utrinque glabrata; petiolus 2–5 mm longus, glabratus, base biglandulosus. Panícula 2.5–11 cm longa, in ramis deflexis, floribus in umbellis 4–6-floris; bractae margine ciliatae, juxta basim biglandulosae; flores pedunculis nullis, pedicellis 5.5–7 mm longis, incrassatis versus apicem. Petala lutea, exposita in alabastro, dorso carinato; petala margine erosa; styli apice dorsaliter rotundati. Samarae 19–21 mm longae, 9–10 mm latae, nux laevis.

Woody vine, climbing to 1.5–6 m; stems cylindrical to sulcate, twisted, initially tomentose and soon glabrate, developing small scattered lenticels on the basal stems. Leaves opposite; petiole 2–5 mm long, tomentose to eventually glabrate, bearing a pair of prominent glands at base, each gland 1.1–1.3 mm in diameter; stipules ca. 0.1–0.2 mm long, borne on the base of the petiole; lamina of larger leaves (5.3–) 8.8–12.5 cm long, (0.9–) 1.4–3.1 cm wide, membranous, elliptical, lanceolate to oblong-lanceolate, or sometimes falcate, obtuse to slightly cordate at base, acute to cuspidate at apex, margins with irregularly spaced vascularized cilia, especially in young leaves, soon deciduous or persistent near the apex; hairs sessile or subsessile, nearly straight and strongly appressed or long-stalked, forming a dense indument on primary and secondary veins on both sides, later deciduous or persistent on the abaxial surface; adaxial surface with impressed veins. Inflorescence a small panicle, terminal or axillary, pendulous, initially tomentose

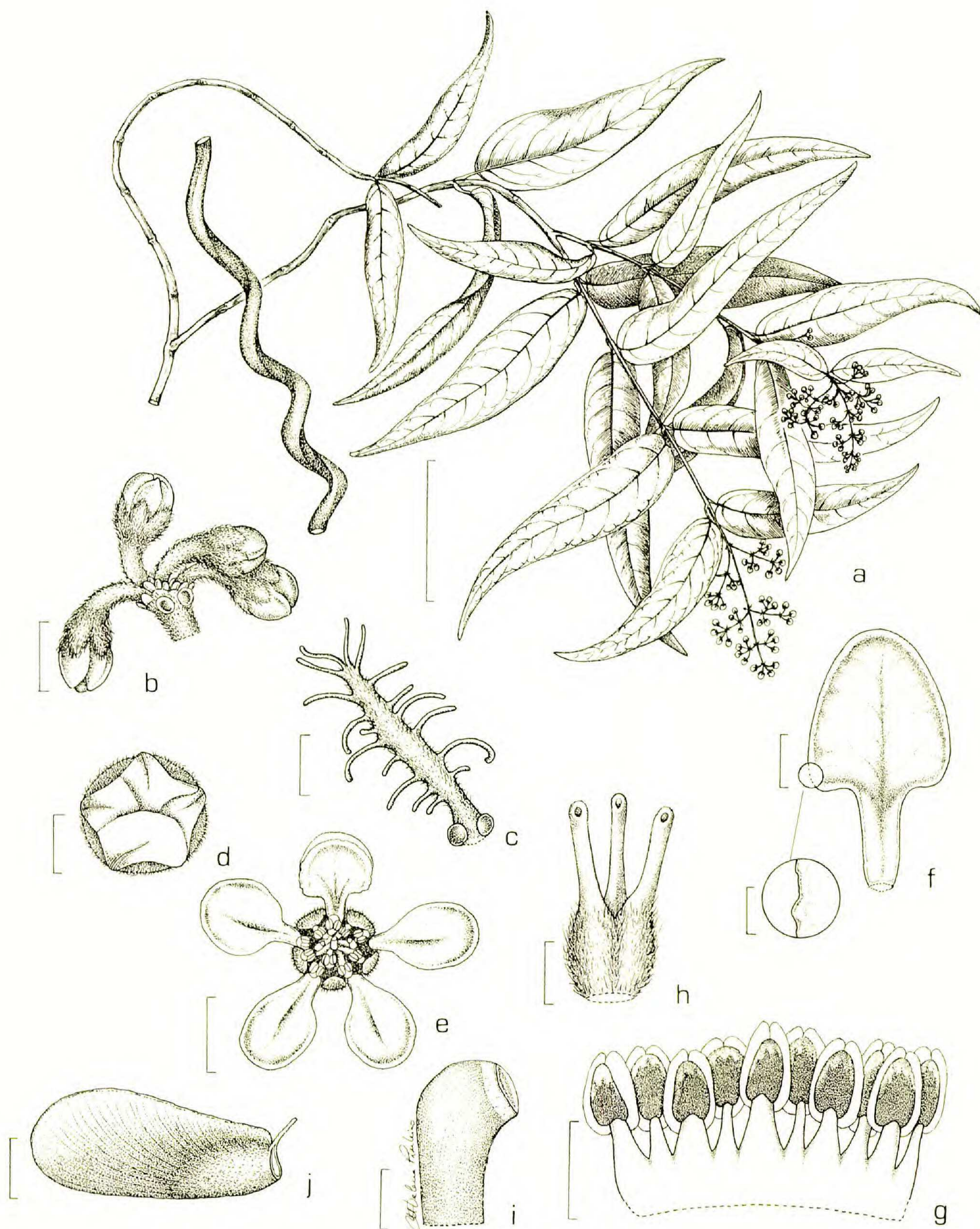


FIG. 1. *Heteropterys fragilis*. a) flowering branch with detail of basal stem; b) umbel of flower buds; c) inflorescence bract; d) flower bud from above; e) flower from above; f) posterior petal with portion of margin enlarged; g) androecium, laid out, abaxial view, the stamen second from right opposite the posterior petal, stamen fourth from left opposite the anterior sepal; h) gynoecium, anterior style in middle; i) detail of apex of 1 style; j) samara. Scale bars: a, 5 cm; b, 4 mm; c-d, 1.5 mm; e, 3 mm; f, 1 mm (petal) and 0.25 mm (margin); g, 2 mm; h, 1 mm; i, 0.25 mm; j, 5 mm. (Based on Amorim 3146.)

to glabrate, (2.5-) 3.5-8 (-11) cm long, primary branches 4-10, 0.5-3.5 cm long, secondary branches 4-8, 0.3-0.6 cm long, the ultimate units 4-6-flowered umbels; inflorescence bracts ca. 5.5 mm long, 0.6-0.8 mm wide, linear, ciliate on the margins, biglandular at base, the glands ca. 1 mm long, bright green; peduncle absent;

bracts 0.6–0.7 mm long, 0.7–0.8 mm wide, ovate, eglandular, abaxially tomentose, adaxially glabrous; bracteoles like bracts but smaller, eglandular; pedicel 5.5–7 mm long, 0.9–1.8 mm wide (7–9 mm long, ca. 2.2 mm wide in fruit), tomentose, somewhat thicker distally. Sepals 1.6–1.8 mm long, 1.1–1.4 mm wide, pale brown, rounded at apex, abaxially tomentose, adaxially glabrous, eglandular. Petals exposed in the enlarging bud, yellow, glabrous, slightly erose at margin, abaxially keeled; lateral petals spreading, claw ca. 1.4 mm long, limb 4.7–4.9 mm long, 2.3–2.5 mm wide; posterior petal erect, claw ca. 2.1 mm long, limb 3–5.2 mm long, 2.7–2.9 mm wide. Stamens glabrous, unequal; filaments 1.9–2.2 mm long, 0.2–0.7 mm wide, connate ca. 1/2 their length; anthers 1.6–1.8 mm long, all alike, glabrous, erect to reflexed, connective proximally 2/3–4/5 dark red, the distal 1/3–1/5 white. Ovary ca. 1.5 mm high, thinly tomentose; styles 2.3–2.5 mm long, erect and straight, equalling or slightly exceeding the anthers, the posterior 2 rotated so that all 3 stigmas face toward posterior petal, glabrous, rounded dorsally at the apex, the stigma internal. Samara pale brown, 19–21 mm long, borne horizontally, sparsely tomentose; dorsal wing almost as long as samara, ca. 16 mm long, 9–10 mm wide, nut 4.6–8.5 mm in diameter, ovoid, smooth-sided, without lateral crests or winglets.

ADDITIONAL SPECIMENS EXAMINED. **Brazil.** RIO DE JANEIRO: Mpio. Magé: Área do Centro de Primatologia do Rio de Janeiro, 14 Oct 1984 fl, *Lima et al.* 2179 (RB, SP); Estação Ecológica de Paraíso, próximo a Estação de Tratamento de Água, 18 Oct 1991 fl, *Gomes et al.* 432 (CEPEC, RB); Estação Ecológica de Paraíso, 28 Nov 1991 fl, *Lima et al.* 4335 (RB); Serra dos Órgãos, [Mpio. Teresópolis], Caneca-Fria, Dec 1974 fl, *Occhioni* 6631 (CEPEC, MICH, RFA).

Heteropterys fragilis is distinguished by its leaves with a short petiole and membranous, lanceolate to oblong-lanceolate or falcate lamina, which is obtuse to slightly cordate at base and soon glabrate on both surfaces. Also, it has linear inflorescence bracts with ciliate margins, petals with an erose margin, styles rounded dorsally at the apex, and stigmas facing toward the posterior petal. The samara is borne horizontally, its nut smooth-sided, without lateral crests or winglets.

This species belongs to Series *Holopetalum* (Griseb.) Nied., characterized principally by sessile pedicels, yellow petals, and a lamina not persistently metallic-sericeous below (Anderson 1982). It is related to *H. crinigera* Griseb., sharing a similar lamina shape, vesture (especially *Occhioni* 6631), and rounded style apex. This last character is rare for the series; almost all species show a pedaliform or short-appendiculate style apex. The following couplet presents the distinguishing characters for these two species:

1. Petiole 2–5 mm long, lamina (5.3–) 8.8–12.5 cm long, (0.9–) 1.4–3.1 cm wide; inflorescence bracts ca. 5.5 mm long, margins ciliate; petals slightly erose at margin; styles 2.3–2.5 mm long, erect and straight, all stigmas facing toward the posterior petal; samara 19–21 mm long, the nut ovoid, smooth-sided. *H. fragilis.*
1. Petiole (6–) 10–15 mm long, lamina (9.5–) 12–18.3 cm long, 4.8–5.5 cm wide; inflorescence bracts 1.3 mm long, margins entire; lateral petals erose and posterior petal denticulate at margin; styles ca. 5.5 mm long, slightly arcuate at base, all stigmas facing toward the center of the flower; samara 30–38 mm long, the nut subspheroidal, with prominent longitudinal nerves. *H. crinigera.*

Heteropterys fragilis occurs in a restricted area adjacent to the National Park of Serra dos Órgãos in the state of Rio de Janeiro, between 200 and 600 m elevation. It is a slender vine growing below the canopy of Atlantic forest. The specific epithet refers to the delicate aspect of the whole plant.

Heteropterys occhionii Amorim, sp. nov.—TYPE: BRAZIL. Rio de Janeiro: Mpio. Itatiaia, Parque Nacional do Itatiaia, May 1977 fl, *P. Occhioni* 8213 (holotype: RFA!; isotypes: CEPEC! MBM! MICH! RB!). Fig. 2.

Liana sublignosa, ramis mox glabrescentibus; lamina foliorum majorum 5.9–12.5 cm longa, 1.5–3.7 cm lata, lanceolata vel oblongo-lanceolata, margine sinuata, utrinque glabrata, abaxialiter aliquot glandulis parvis munita, reticulo utrinque prominenti; petiolus 7–12 mm longus, glabratus, base biglandulosus. Panicula 7–15 cm longa, in ramis deflexis; umbellae 4–5-florae interdum 2 floribus proximalibus adjectis; flores pedunculis nullis, pedicellis 7.3–8.3 mm longis, delicatis. Petala flava, exposita in alabastro, valde reflexa, decidua, abaxialiter plana, margine erosa; styli apice truncati, 1.6–2.9 mm longi.

Slender vine; stems evidently 4-angled, initially sericeous, soon glabrate. Leaves opposite; petiole 7–12 mm long, sericeous to glabrate, bearing a pair of impressed glands at base, each gland ca. 0.8 mm in diameter; stipules ca. 0.2–0.3 mm long, borne on petiole in the proximal half, apparently often absent; lamina of larger leaves (5.9–) 8–12.5 cm long, 1.5–3.7 cm wide, papery, broadly lanceolate to oblong-lanceolate or sometimes linear-lanceolate, cuneate to slightly obtuse at base, acute to apiculate at apex, widely sinuate at margins, bearing a series of small sessile submarginal glands, often in sinuses, sparsely sericeous to glabrescent, with the hairs sessile or subsessile and appressed, later deciduous or persistent on midrib, especially below; lateral veins visible above, lateral veins and reticulum visible below. Inflorescence paniculate, terminal, pendulous, densely sericeous, (7–) 11.2–15 cm long, the main axis elongated, primary branches 8–12, loosely arranged, 0.4–4.6 cm long, secondary branches rarely developed, the flowers borne ultimately in 4–5-flowered umbels, occasionally with an additional pair of flowers borne more proximally; inflorescence bracts 3.7–7.8 mm long, 1.1–1.4 mm wide, linear-lanceolate, entire at margins, eglandular or biglandular at base, the glands 0.3–0.5 mm long; peduncle absent; bracts ca. 0.7 mm long, 0.4 mm wide, ovate, eglandular, abaxially sericeous, adaxially glabrous; bracteoles like bracts but smaller, eglandular; pedicel 7.3–8.3 mm long, 0.5–1 mm wide, slender, straight, densely sericeous. Sepals 2–2.2 mm long, 1.2–1.5 mm wide, rounded at apex, abaxially sericeous, adaxially glabrous, eglandular. Petals exposed in the enlarging bud, pale yellow, translucent, glabrous, abaxially smooth, all 5 reflexed in anthesis, often deciduous, slightly erose at the margin; lateral petals 5.3–5.5 mm long, 1.7 mm wide, claw ca. 2 mm long; posterior petal 4.8 mm long, ca. 1.7 mm wide, the thick claw ca. 2 mm long. Stamens glabrous, subequal; filaments 1.6–2.9 mm long, 0.2–0.7 mm wide, connate ca. 1/2 their length; anthers 1.2–1.5 mm long, all alike, glabrous, reflexed, the connective uniformly brown. Ovary ca. 1.5 mm high, densely sericeous; styles 3.7–4.2 mm long, glabrous, slender, exceeding the anthers, the anterior slightly divergent, truncate at apex. Samara not seen.

Heteropterys occhionii is readily distinguished from other taxa by its elongated and lax inflorescences with each branch terminating in an umbel of 4–5 flowers (occasionally with an additional pair of flowers borne more proximally), slender pedicels, and long styles exceeding the anthers and truncate at the apex. It is allied with a group of species with sessile pedicels and petals strongly reflexed during anthesis.

Heteropterys occhionii resembles *H. ternstroemiifolia* Adr. Juss. in the vesture of the lamina, inflorescence shape, straight pedicels, mostly deciduous translucent petals, and styles truncate at apex. It differs in its lamina, which has a widely

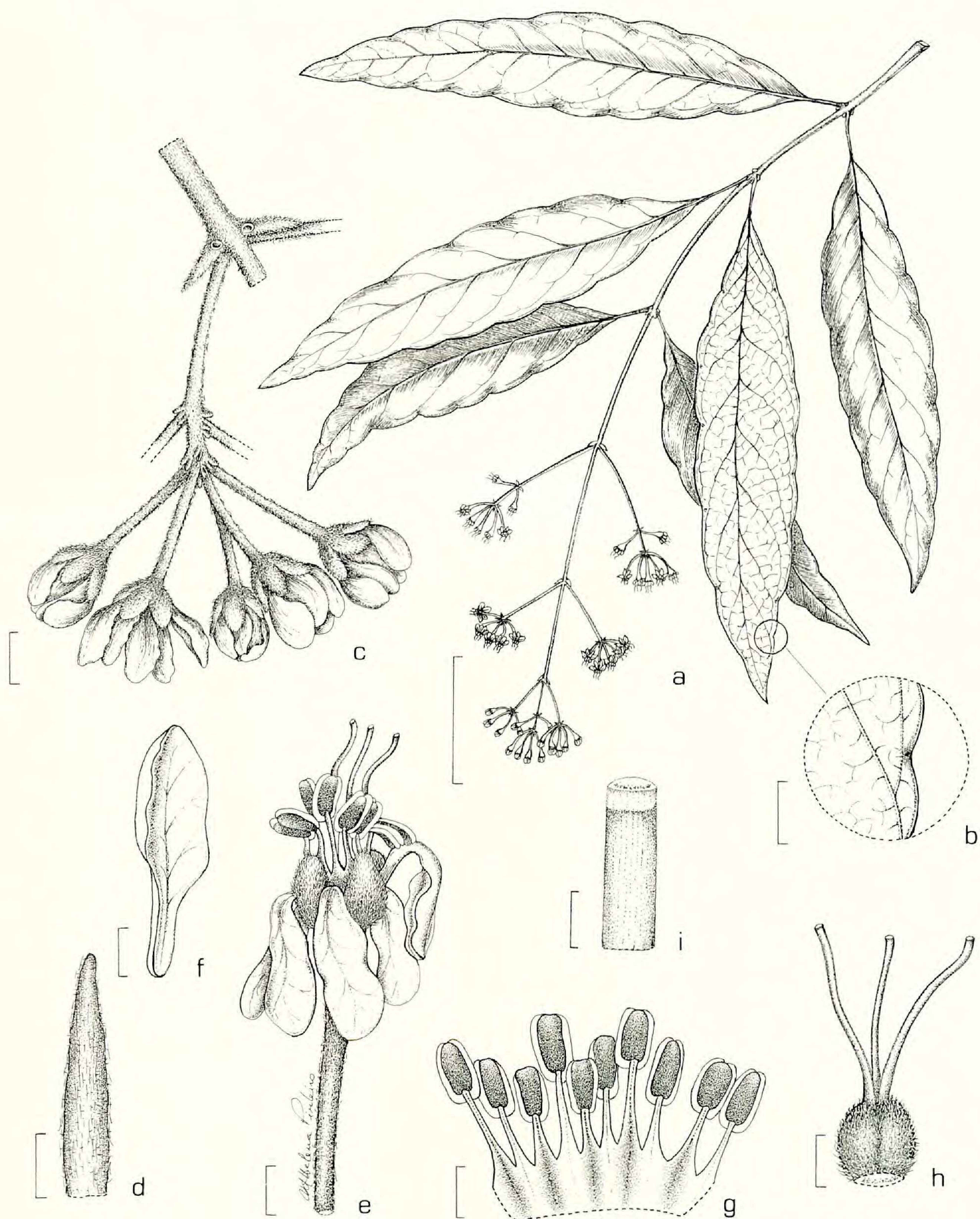


FIG. 2. *Heteropterys occhionii*. a) flowering branch; b) detail of abaxial surface of lamina; c) umbel of flower buds; d) inflorescence bract; e) flower; f) lateral petal; g) androecium, laid out, abaxial view, the stamen second from right opposite the posterior petal, stamen fourth from left opposite the anterior sepal; h) gynoecium, anterior style in middle; i) detail of apex of 1 style. Scale bars: a, 3 cm; b, 2,5 mm; c, 4 mm; d, e, 2 mm; f, g, 1 mm; h, 1 mm; i, 0.25 mm. (Based on *Occhioni* 8213.)

sinuate margin with a series of small sessile submarginal glands and the reticulum visible below, and also in the linear-lanceolate inflorescence bracts. It also shows several similarities to *H. sanctorum* W. R. Anderson, such as the androecium and style shape. Nevertheless, *H. occhionii* has elongated and terminal inflorescences, whereas those of *H. sanctorum* are short, axillary, and borne on old leafless stems.

This distinctive species, known only from the type collection, was found in the National Park of Itatiaia, in the state of Rio de Janeiro, probably in the Atlantic forest, above 1200 m elevation.

The specific epithet honors Prof. Paulo Occhioni (b. 1915), collector of the type and many other excellent specimens of the southern Brazilian flora, which are housed in the herbarium of the Universidade Federal do Rio de Janeiro (RFA).

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LITERATURE CITED

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